



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>7</sup> :</b> <b>H01J 40/00, 43/30</b>	<b>A3</b>	<b>(11) International Publication Number:</b> <b>WO 00/21115</b> <b>(43) International Publication Date:</b> 13 April 2000 (13.04.00)
<b>(21) International Application Number:</b> PCT/GB99/03090 <b>(22) International Filing Date:</b> 17 September 1999 (17.09.99) <b>(30) Priority Data:</b> 9821359.8 2 October 1998 (02.10.98) GB <b>(71) Applicant (for all designated States except US):</b> THE SECRETARY OF STATE FOR DEFENCE [GB/GB]; Whitehall, London SW1A 2HB (GB). <b>(72) Inventor; and</b> <b>(75) Inventor/Applicant (for US only):</b> GARDNER, John [GB/GB]; AWE, Aldermaston, Reading, Berkshire RG7 4PR (GB). <b>(74) Agent:</b> SKELTON, S., R.; D/IPR, Formalities Section, Poplar 2, MOD Abbey Wood #19, Bristol BS34 8JH (GB).		<b>(81) Designated States:</b> AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i>  <b>(88) Date of publication of the international search report:</b> 20 July 2000 (20.07.00)
<b>(54) Title:</b> PHOTOMULTIPLIER TUBE CIRCUIT  <b>(57) Abstract</b>  A photomultiplier tube circuit with reduced power consumption comprising a photomultiplier tube having a plurality of dynodes, charging circuitry for providing charge to the plurality of dynodes and an oscillator for providing a high voltage supply to the charging circuitry characterised in that the photomultiplier tube circuit further comprises means for sampling the voltage of at least one of the dynodes and a switching means for switching the oscillator on and off with respect to the at least one dynode voltage sampled.		

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# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>1H/P0026/H0D</b>	<b>FOR FURTHER ACTION</b> <small>see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.</small>	
International application No. <b>PCT/GB 99/ 03090</b>	International filing date (day/month/year) <b>17/09/1999</b>	(Earliest) Priority Date (day/month/year) <b>02/10/1998</b>
Applicant  <b>THE SECRETARY OF STATE FOR DEFENCE et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any nucleotide and/or amino acid sequences disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

**4. With regard to the title,**

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

**PHOTOMULTIPLIER TUBE CIRCUIT**

**5. With regard to the abstract,**

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

2

☐ as suggested by the applicant.

☐ None of the figures.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

## INTERNATIONAL SEARCH REPORT

International Application No.

T/GB 99/03090

## A. CLASSIFICATION OF SUBJECT

IPC 7 H61J40/00 H61J43/30

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 672 996 A (FRANCE ETAT ARMEEMENT ;PROENGIN (FR)) 21 August 1992 (1992-08-21) claims 1-5	1,7
A	FR 2 213 585 A (ROYET M) 2 August 1974 (1974-08-02) claim 1	1
A	GB 2 190 785 A (BALL GEOFFREY WILLIAM) 25 November 1987 (1987-11-25) claims 1-10	1
A	US 3 997 779 A (RABL CARL-ROLAND) 14 December 1976 (1976-12-14) claim 1	1



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents:

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"Z" document member of the same patent family

Date of the actual completion of the international search

27 March 2000

Date of mailing of the international search report

04/04/2000

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Van den Bulcke, E

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 99/03090

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 2672996	A	21-08-1992	NONE	
FR 2213585	A	02-08-1974	NONE	
GB 2190785	A	25-11-1987	NONE	
US 3997779	A	14-12-1976	DE 2353573 B GB 1488169 A	06-03-1975 05-10-1977